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Technological Survey of Tellurium and Its Compounds

A comprehensive literature survey was made of the scientific and technological information on tellurium, its oxides, fluorides, and oxyfluorides. The results of the survey are contained in *Laboratory Investigations in Support of Fluid-Bed Fluoride Volatility Processes*, by D. R. Vissers and M. J. Steindler, ANL-7142, Argonne National Laboratory, Argonne, Illinois. The report contains pertinent data for the physical and chemical properties and includes the behavior of tellurium in the processing of nuclear fuels by fluoride volatility methods. Tabulated vapor pressures and abstracts are also included.

Fission-product tellurium is transformed into a volatile compound in the processing of reactor fuels by the various fluoride volatility methods. The volatile compound, believed to be the hexafluoride, is relatively stable and inert; consequently, it is difficult to remove from the off-gases of the fluoride volatility process. The presence of tellurium in the off-gases becomes an increasingly serious problem as the cooling time of the fuel is shortened.

The comprehensive literature review includes all available data on the chemical and physical properties of tellurium, tellurium oxides, the hexafluoride and tetrafluoride, and other fluorine-containing compounds of tellurium which would be pertinent to the process problem of handling fission product tellurium in fluoride form. The technology of tellurium handling in nonaqueous processing of nuclear fuels is also reviewed.

Notes:

1. This report is available from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151; Attn: Code 410.04, for \$3.00 (microfiche copies, \$0.65).
2. The report may represent a considerable time-saving device to anyone interested in the technology of tellurium.
3. Inquiries concerning this innovation may be directed to:

Office of Industrial Cooperation
Argonne National Laboratory
9700 South Cass Avenue
Argonne, Illinois 60439
Reference: B68-10201

Source: D. R. Vissers and M. J. Steindler
Chemical Engineering Division

(ARG-10119)

Patent status:

Inquiries about obtaining rights for commercial use of this innovation may be made to:

Mr. George H. Lee, Chief
Chicago Patent Group
U.S. Atomic Energy Commission
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439

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